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EXAMINER	
BURCH, MELODY M	

ART UNIT	PAPER NUMBER
3683	

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/708,673	LU, JIANBO	
	Examiner	Art Unit	
	Melody M. Burch	3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,9-15 and 17-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,9-15 and 17-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 6/14/04 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. Examiner is specifically referring to references: DE-3625025, DE-4224887, and EP-0295396. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 31, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of US Patent 6842683 to Kim.

Schlichenmaier et al. disclose in col. 2 lines 28-37 a method of controlling a vehicle and a trailer comprising: determining a presence of a trailer and applying brake steer to the vehicle in response to the trailer to enhance control of the trailer relative to the vehicle.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of

Schlichenmaier et al. to have included applying brake steer comprises applying at least one brake at a first wheel to reduce a vehicle turning radius, as taught by Kim, in order to provide a means of improving vehicle stability.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and further in view of EP-0253964 (EP'964).

Schlichenmaier et al. fail to include the limitation of generating a reverse direction signal of the vehicle and applying brake steer in response to the reverse direction signal.

EP'964 teaches in the last 7 lines of the abstract the limitation of generating a reverse direction signal of the vehicle and applying brake steer in response to the reverse direction signal.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of Schlichenmaier et al. to have included effecting brake steer in response to a generated reverse direction signal, as taught by EP'964, in order to provide a means of triggering the control of the vehicle-trailer combination.

5. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and EP-0253964 (EP'964) as applied to claim 2 and further in view of US Patent 6112845 to Oyama et al.

Schlichenmaier et al., as modified, fail to include the limitation of generating the reverse direction signal from a shift lever or a transmission controller.

Oyama et al. teach in col. 4 the limitation of a reverse detecting unit 18

generating a reverse direction signal from a shift lever or a transmission controller (position of transmission gears).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the reverse direction signal of Schlichenmaier et al. to have been derived from a shift lever or a transmission controller, as taught by Oyama et al., in order to provide a functionally equivalent means of providing vehicle travel direction information.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and EP-0253964 (EP'964) as applied to claim 2 and further in view of US Patent 4372407 to McColl.

Schlichenmaier et al., as modified, fail to include the limitation of generating the reverse direction signal from a push button.

McColl teaches in col. 8 lines 66-67 the limitation of a reverse direction signal being generated from a push button.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the reverse direction signal of Schlichenmaier et al. to have been derived from a push button, as taught by McColl, in order to provide a functionally equivalent means of providing vehicle travel direction information.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and EP-0253964 (EP'964) as applied to claim 2 and further in view of JP-2003-191774 (using US 2005/0027402 to Koibuchi et al. as an English equivalent).

Schlichenmaier et al., as modified, fail to include the limitation of generating the reverse direction signal from a wheel speed sensor.

Koibuchi et al. teach in paragraph [0256] the limitation of a reverse direction signal being generated from a push button.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the reverse direction signal of Schlichenmaier et al. to have been derived from a wheel speed sensor, as taught by Koibuchi et al., in order to provide a functionally equivalent means of providing vehicle travel direction information.

8. Claims 9, 17, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and further in view of US Patent 5709435 to Wood.

Schlichenmaier et al. are silent with regards to the limitation of applying a trailer brake and a vehicle brake.

Wood teaches in col. 5 lines 16-19 the limitation of applying a trailer brake and a vehicle brake.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of Schlichenmaier et al. to have included applying a trailer brake and a vehicle brake, as taught by Wood, in order to provide a means of improving vehicle stability by helping to prevent jackknifing.

9. Claims 10 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view Kim and further in view of US Patent 6804597 to Posselius et al.

Schlichenmaier et al. lack the limitation of determining the presence of a trailer with a hitch sensor.

Posselius et al. teach in col. 4 lines 50-53 the limitation of a hitch sensor 22 for determining the presence of a trailer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of Schlichenmaier et al. to have included a hitch sensor, as taught by Posselius et al., in order to provide a means of determining the presence and more specifically the orientation and location of a trailer.

10. Claims 11, 12, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and further in view of US Patent 5455557 to Noll et al.

Schlichenmaier et al. lack the limitation of determining the presence of a trailer with a reverse aid or ultrasonic sensor.

Noll et al. teach in col. 4 lines 2-6 the limitation of an ultrasonic sensor (Applicant notes that the reverse aid sensor is an ultrasonic sensor) for determining the presence of a trailer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of

Schlichenmaier et al. to have included an ultrasonic or reverse aid sensor, as taught by Noll et al., in order to provide a means of determining the presence and more specifically the orientation and location of a trailer.

11. Claims 13, 15, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and further in view of JP-2002-12172 (JP'172).

Schlichenmaier et al. lack the limitation of determining the presence of a trailer with a camera or a manually activated mechanism.

JP'172 teaches in lines 3-4 from the bottom of the solution section the limitation of a camera for determining the presence of a trailer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of Schlichenmaier et al. to have included a camera or manually activated mechanism, as taught by JP'172, in order to provide a means of determining the presence and more specifically the orientation of a trailer.

12. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view Kim and further in view of US Patent 6804597 to Traechtler.

Schlichenmaier et al. lack the limitation of determining the presence of a trailer with a harness current.

Traechtler teaches in col. 8 lines 3-4 the limitation of using harness current for determining the presence of a trailer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of Schlichenmaier et al. to have included the use of harness current, as taught by Traechtler, in order to provide a means of determining the presence of a trailer.

13. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view Kim and US Patent 5709435 to Wood as applied to claim 17 above, and further in view of EP-0253964 (EP'964).

See the rejection of claim 2.

14. Claims 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view Kim and Wood and EP-0253964 (EP'964), as applied to claim 18 above, and further in view of Oyama et al.

See the rejection of claims 3 and 5.

15. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and Wood and EP-0253964 (EP'964), as applied to claim 18 above, and further in view of McColl.

See the rejection of claim 4.

16. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and Wood and EP-0253964 (EP'964), as applied to claim 18 above, and further in view of Koibuchi et al.

See the rejection of claim 6.

17. Claims 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view Kim and Wood as applied to claim 17 above, and further in view of Posselius et al.

See the rejection of claim 10.

18. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and Wood as applied to claim 17 above, and further in view of Noll et al.

See the rejection of claims 11 and 12.

19. Claims 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view Kim and Wood as applied to claim 17 above, and further in view of JP-2002-12172 (JP'172).

See the rejection of claims 13 and 15.

20. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and Wood as applied to claim 17 above, and further in view of Traechtler.

See the rejection of claim 14.

21. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim as applied to claim 31 above and further in view of Urvoy.

Schlichenmaier et al. fail to include the limitation of applying brake steer comprises applying an increased drive torque to a second wheel relative to a first wheel.

Urvoy teaches in col. 1 lines 19-23 the limitation of applying brake steer comprises applying an increased drive torque to a second wheel relative to a first wheel.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of Schlichenmaier et al. to have included applying an increased drive torque to a second wheel relative to a first wheel, as taught by Urvoy, in order to provide a means of improving vehicle stability.

22. Claims 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim as applied to claim 31 above and further in view of US Patent 5747683 to Gerum et al.

Schlichenmaier et al. lack the limitation of a response to the reverse signal direction signal and the steering wheel angle signal and yaw rate signal.

Gerum et al. teach in figure 1 the use of a control mechanism including reverse directional signal (from wheel speeds) and steering wheel angle signal inputs as shown.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the inputs into the controller of Schlichenmaier et al., to have included control based on a reverse directional signal and steering wheel angle signal, as taught by Gerum et al., in order to provide a means of achieving increased vehicle stability based on particular vehicle dynamic characteristics.

23. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim as applied to claim 31 above and further in view of US Patent 6017101 to Matsuda.

Schlichenmaier et al. lack the limitaiton of a response to the reverse signal direction signal and the steering torque signal.

Matsuda teaches in the figure on the front of the patent the use of a control mechanism including reverse directional signal (from wheel speeds) and steering torque signal inputs as shown.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the inputs into the controller of Schlichenmaier et al., to have included control based on a reverse directional signal and steering torque signal, as taught by Matsuda, in order to provide a means of achieving increased vehicle stability based on particular vehicle dynamic characteristics.

24. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim as applied to claim 31 above and further in view of US Patent 5747683 to Gerum et al. and US Patent 5480221 to Morita et al.

Schlichenmaier et al. lack the limitaiton of a steering wheel angle signal, a vehicle velocity signal, and a reverse direction signal.

Gerum et al. teach in figure 1 the use of a control mechanism including reverse directional signal (from wheel speeds) and steering wheel angle signal inputs as shown.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the inputs into the controller of Schlichenmaier et al., to have included control based on a reverse directional signal and steering wheel angle signal, as taught by Gerum et al., in order to provide a means of achieving increased vehicle stability based on particular vehicle dynamic characteristics.

Morita et al. show in the figure on the front of the patent a vehicle velocity sensor 73 as an input into a braking controller 71.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the inputs into the controller of Schlichenmaier et al., to have included control based on a vehicle velocity sensor and signal, as taught by Morita et al., in order to provide a means of achieving increased vehicle stability based on particular vehicle dynamic characteristics.

25. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim as applied to claim 31 above and further in view of US Patent 5005130 to Breen et al.

Schlichenmaier et al. lack the limitation of a means to determine trailer position.

Breen et al. disclose in col. 9 lines 25-27 the limitation of using trailer position as a control parameter.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the inputs into the controller of Schlichenmaier et al., to have included control based on a reverse directional signal and steering wheel angle signal, as taught by Breen et al., in order to provide a means of achieving increased vehicle stability based on particular vehicle dynamic characteristics.

Response to Arguments

26. Applicant's arguments filed 8/17/05 have been fully considered but they are not persuasive.

Applicant argues that no teaching or suggestion is found in the Schlichenmaier

reference for applying at least one brake at a first wheel to reduce a turning radius of the vehicle and trailer. Applicant further argues that in the Kim reference no teaching or suggestion is provided for a vehicle with a trailer and applying brake-steer to reduce the turning radius of the vehicle and trailer in response to the presence of a trailer.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Examiner notes that the rejections of the independent claims are based on Schlichenmaier *in view of* Kim. Schlichenmaier discloses in col. 2 lines 28-37 a vehicle with a trailer that determines the presence of a trailer and applies a brake steer to the vehicle in response to the presence of the trailer to enhance control of the trailer relative to the vehicle. Kim is solely used for the teaching of brake steer means which includes reducing a turning radius of a vehicle by braking a particular wheel to enhance vehicle stability control.

Examiner maintains that it would have been obvious to one of ordinary skill in the brake art at the time the invention was made to have modified the brake control scheme of Schlichenmaier to have incorporated braking at a particular wheel to reduce the turning radius of the vehicle, as taught by Kim, in order to provide an old and well-known means of effecting enhanced vehicle stability control.

Accordingly, the rejections have been maintained.

Conclusion

27. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 571-272-7114. The examiner can normally be reached on Monday-Friday (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James McClellan can be reached on 571-272-6786. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mmb
October 20, 2005
Melody M. Burch
10/20/05

Melanie Torres
Primary Examiner
10-27-05